

BACKGROUND – LATIP

In February 2017 the Council approved the Local Area Transportation Improvement Program, referred to as LATIP. This program evaluated the master plan as if it were a single development and identified the necessary infrastructure to serve this growth. A cost was assigned to this infrastructure, and a per-trip fee was estimated based on the number of trips the master plan was expected to generate in 2040 at 100% build-out. This fee is lockboxed such that its revenue can only be spent on projects included in the LATIP, all of which are located in the White Oak area.

At the intersection of New Hampshire Avenue (MD 650) and Powder Mill Road, the LATIP-identified treatments significantly deferred from the findings of the analysis previously performed as part of the White Oak Science Gateway Master Plan. There was inadequate time before the Council action to resolve this discrepancy, and the Council – acknowledging some amount of effort would be necessary – assigned a placeholder \$5 million to the intersection.

This placeholder was assigned with the expectation that the intersection would have to be further evaluated. It was done so with the awareness that pending development – largely led by the Duffie Companies – was imminently forthcoming.

The approval of LATIP left open the potential for private interests to propose changes to the program. In such cases, applicants would perform the analysis, seek technical concurrence, and this proposal would then be publicly vetted. This public hearing is a direct result of this process.

A crediting process was also established by the LATIP under the expectation that private development would be able to implement infrastructure in the program within a faster

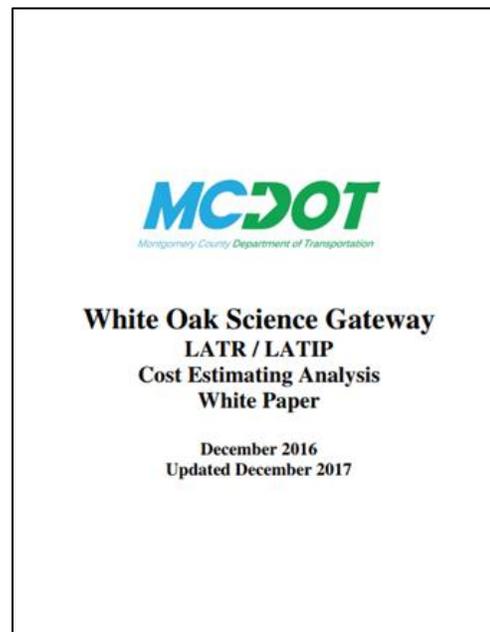
timeframe and at a lower cost than if left fully to the County to implement.

A development may build out infrastructure in the LATIP and receive credit toward their LATIP fee. Upon either (1) drawing down their LATIP fee obligation or (2) utilizing the full allocation for a project in the LATIP: a developer may then become eligible for impact tax credits.

Developers benefit from this approach by being able to see that LATIP infrastructure is provided nearest to them, instead of elsewhere in the White Oak area. The inclusion of impact tax credits further localizes funding, as impact taxes are otherwise expended countywide.

Additional information regarding LATIP is available in the White Paper available at:

<https://www.montgomerycountymd.gov/dot-dir/Resources/Files/LATR-WhitePaper.pdf>



BACKGROUND – DEVELOPER

The Duffie Companies are a lead stakeholder in several developments in the immediate area. These include the Home2 Suites along Elton Road, which is under construction and nearly ready to obtain its Certificate of Occupancy. At that time the Duffie would be obligated to either pay the LATIP fee, or to build projects included in the LATIP fee for credit.

The timeline associated with the Certificate of Occupancy is the basis for the schedule of this public hearing, as a decision on the developer's proposal must be made in the near future as to determine whether Duffie will (1) construct treatments for credit in accordance with the proposal, or (2) pay the LATIP fee and impact taxes in full.

Other Duffie projects in the area include the Hillandale Gateway on the southwest quadrant of New Hampshire Avenue and Powder Mill Road, and the Hillandale Shopping Center located on the east side of New Hampshire Avenue, between Powder Mill Road and Elton Road.

EVALUATION

Hillandale Gateway is currently moving through the County's Development Review process. It is via this process that the Duffie Companies prepared a proposal to replace the placeholder \$5 million in the LATIP with a newly analyzed set of proposed treatments.

At their expense, Duffie contracted with Lenhart Traffic Consulting, Inc. to perform a traffic analysis of the Hillandale area. This analysis focused on two intersections along New Hampshire Avenue: at Powder Mill Road as well as at Elton Road.

The analysis assumed a build year of 2040 and 100% of master plan build-out, which keeps with the methodology established by the

LATIP. It then added its own site-generated trips for the Hillandale Gateway project. While this technically double-counts the Gateway's trips, its application ensures that the trips are applied at a more nuanced level of detail that the areawide models used in the LATIP would not have captured.

The analysis did not assume any traffic currently originating from the Hillandale Shopping Center would change its behavior. Traffic exiting the shopping center onto Powder Mill Road would continue to use Powder Mill Road, and traffic exiting onto Elton Road would continue to use Elton Road. This assumption of a *0% diversion* will be referenced again later in this testimony.

As previously stated, any such proposed changes to the LATIP would have to seek technical concurrence and also be publicly vetted.

This analysis has been reviewed by both MCDOT as well as SHA, and both agencies find that the evaluation and its findings are technically sound. The proposed treatments meet the technical criteria established for the area by the Subdivision Staging Policy, which establishes a limit of 80 seconds of overall intersection delay.

Information has been presented to the public at six meetings this year, culminating in tonight's public hearing:

- May 24th Kickoff presentation
- Oct 1st Hillandale Civic Association
- Oct 23rd Friends of White Oak
- Oct 24th Hillandale residents in Prince George's County
- Nov 7th East County Citizens Advisory Board
- Nov 8th Open House
- Nov 15th Public Hearing

PROPOSAL

The analysis prepared by the Duffie Companies identifies four distinct components, including two treatments at the intersection of New Hampshire Avenue and Powder Mill Road, a slip-ramp and queue jump at Elton Road, and traffic calming along Elton Road.

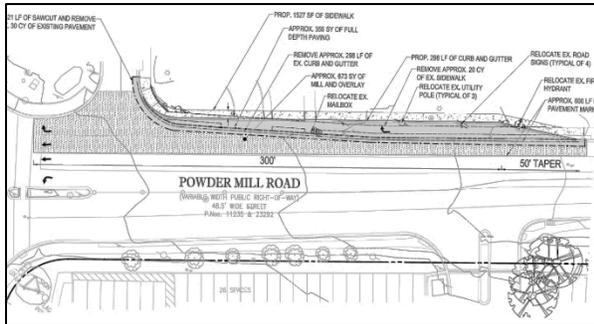


Figure 1 – East leg of Powder Mill Rd

As shown in **Figure 1**, along westbound Powder Mill Road is a right-turn lane that is relatively short and often blocked by queued left and thru vehicles. The developer proposes to extend this right-turn lane by over 200 ft as to improve its accessibility for right-turning motorists.

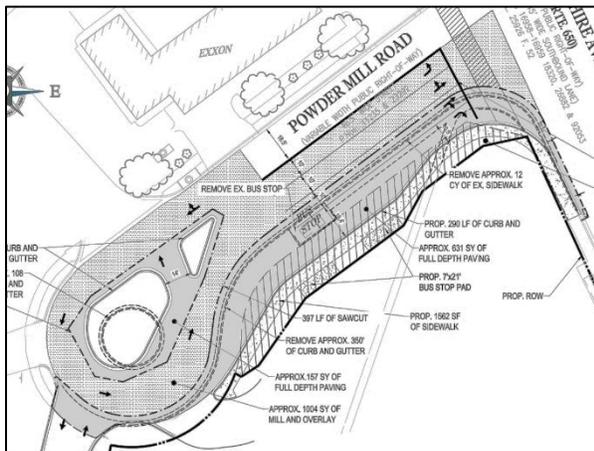


Figure 2 – West leg of Powder Mill Rd

As shown in **Figure 2**, along the eastbound Powder Mill Road approach to New Hampshire Avenue, the analysis proposes widening to add two total lanes: an additional approach lane and room for an additional outbound lane

toward the cul-de-sac. This widening directly serves the growth anticipated by the redevelopment of the Hillandale Gateway site.

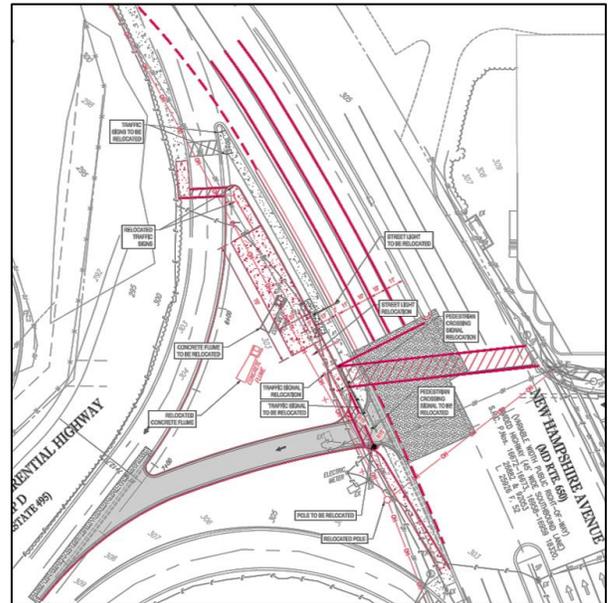


Figure 3 – Elton Slip-Ramp and Bus Stop / Queue Jump

As shown in **Figure 3**, a new slip-ramp is proposed as a west leg to the intersection of New Hampshire Avenue and Elton Road. This ramp would provide one-way thru access from westbound Elton Road directly to the Outer Loop of the Capital Beltway (I-495). This is focused primarily on relieving traffic that, today, generally travels through the Powder Mill intersection to travel between Elton and the Beltway.

Included in this slip-ramp design is a reconstruction of the southbound bus stop. The design proposes to include a queue jump lane whereby buses may exit the southbound flow of traffic to serve the bus stop and would receive an advance green signal to allow them to merge back into traffic ahead of other traffic.

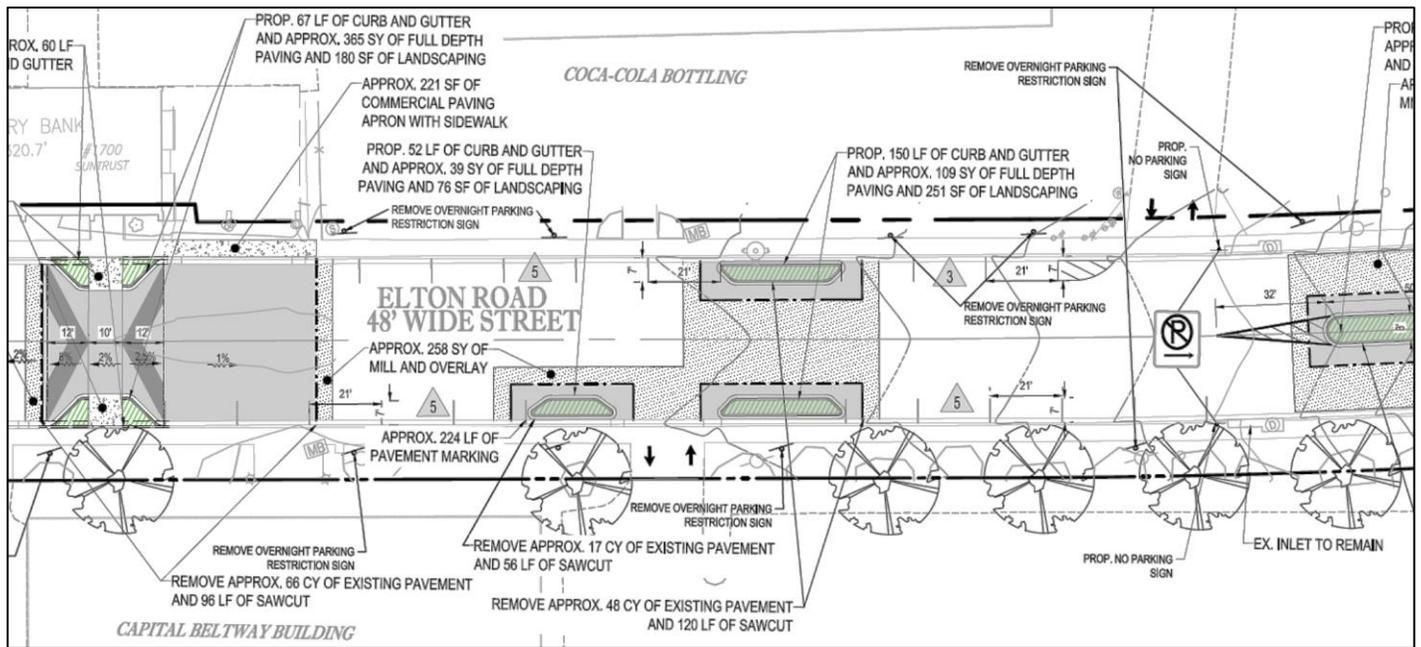


Figure 4 – Traffic calming along Elton Rd

Acknowledging community concerns regarding cut-through traffic along Elton Road, **Figure 4** shows traffic calming along Elton Road which would be implemented prior to or concurrent with the slip-ramp. These measures include a mixture of horizontal and vertical deflection, utilizing speed tables &/or raised crosswalks, neckdowns, and islands to meter speeds through the Montgomery County portion of Elton Road.

Public testimony from several residents opposing the slip-ramp as well as from the Coca-Cola facility supported keeping the overnight parking restrictions currently shown as being removed.

Unrelated to this analysis and its proposed treatments, the Prince George’s Department of Public Works and Transportation (PG-DPWT) recently installed speed humps along their respective portion of Elton Road.

TRAFFIC IMPACTS

As previously noted, the delay thresholds for the area were established by the LATIP at 80 seconds of intersection delay. **Figure 5** shows the intersection delay (in seconds) for the AM and PM peak periods at each intersection with New Hampshire Avenue, across several different scenarios. Also included is the Level of Service, a grading scale ranging from A (minimal delay) to F (exceeding congestion thresholds).

Scenario	Powder Mill Rd		Elton Rd	
	AM	PM	AM	PM
2040 Baseline	76.9 E	125.0 F	4.8 A	9.6 A
Full Build	55.8 E	76.1 E	4.3 A	7.3 A
Full Build 15% Diversion	46.0 D	71.2 E	10.0 A	9.4 A

Figure 5 – Intersection Delay

The **2040 Baseline** scenario is the “No Build” basis of comparison. It includes background trips from the master plan’s 100% build-out and the trips generated by the development. The 2040 Baseline scenario does not include any changes in the existing geometries and configurations, but does include background projects such as other LATIP projects in the area, BRT, and other master planned projects. It shows that without any action, the New Hampshire and Powder Mill intersection will fail during the evening peak period.

The **Full Build** scenario includes the 2040 Baseline scenario’s inputs as well as the treatments along the east and west legs of Powder Mill, the slip-ramp, queue jump, and traffic calming (though the queue jump and traffic calming have minimal effect on the model).

The proposed treatments at Powder Mill Road and Elton Road would reduce delay at Powder Mill by 27% in the AM and 39% in the PM. There would be little impact to operations at Elton Road.

This is accomplished primarily by enabling traffic on Elton to proceed directly to the Beltway instead of using the most common route of turning right onto New Hampshire, U-turning at Powder Mill, and returning as a right-turn onto the existing Beltway ramp.

Full Build was found to have a significant reduction in queueing along southbound New Hampshire in the AM peak period. The analysis identified a reduction in queue from an average 3790 ft to 1770 ft, a reduction of 53%. In the PM there was minimal reverse effect, as the northbound direction approaching Elton the analysis identified changed from an average 3690 ft to 3760 ft, an increase of 2%.

It was previously noted that the analysis assumed 0% of the traffic currently exiting the Hillendale Shopping Center onto Powder Mill Road would divert to Elton Road to use the Elton Road slip-ramp. Peak period observations in November 2018 found that 20% of the traffic along westbound Powder Mill Road consists of traffic exiting the shopping center.

The **Full Build 15% Diversion** scenario estimates that a sizeable share (75%) of the traffic exiting the Hillendale Shopping Center onto Powder Mill Road would instead use Elton Road to utilize the slip-ramp. Compared to the 2040 Baseline, this results in a 40% reduction in delay at Powder Mill in the AM, and a 43% reduction in delay at Powder Mill in the PM. There would, again, be minimal effect to overall operations at the Elton Road intersection.

The top concern raised by stakeholders relates to cut-through traffic between Riggs Road and New Hampshire Avenue, primarily using a route formed by Elton Road and Wooded Way, as highlighted in **Figure 6**.

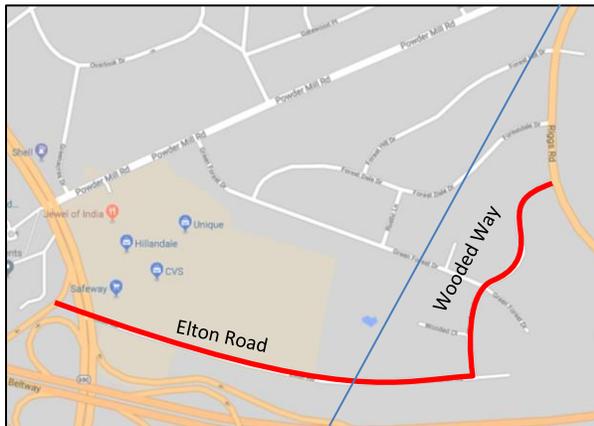


Figure 6 – Map of Hillandale. The cut-through route is highlighted in red. The County Line is shown in blue.

Concerns are primarily focused on traffic traveling westbound. From northbound Riggs Road, in particular, the Elton/Wooded route is an attractive and direct alternative compared to waiting through congestion at the intersection of Powder Mill Road and Riggs Road.

Businesses along Elton Road generate truck traffic that has purportedly made use of the Elton/Wooded route. Signing has been installed at the intersection of Riggs Road and Wooded Way prohibiting trucks.

Wooded Way is a steep and winding street. While speed humps were recently installed by PG-DPWT, residents have expressed continued dissatisfaction with the efficacy of the speed humps.

Elton Road is relatively straight, but two hills can affect the speed of traffic along its length. Each hill approximately peaks at the center of each land use: one hill centered on the residential area, one hill centered on the commercial/industrial area, and the lowest

point between them located where the land use changes.

The traffic calming proposed by the applicant and developed in coordination with MCDOT (shown previously in **Figure 4**) is intended to simultaneously reduce speeds while also discouraging cut-through traffic. It is intended that in combination with PG-DPWT’s speed humps: the reduced speeds may reduce the attraction of using the Elton/Wooded route as a cut-through.

While the slip-ramp and associated traffic calming could be implemented independently of any work at Powder Mill Road, traffic calming along Elton Road would be obligated to occur before or concurrent to any slip-ramp construction. The slip-ramp would not be permitted to operate without traffic calming measures along Elton Road.

Additional traffic calming alternatives have been shared with the community, including restricting either Elton Road or Wooded Way to one-way eastbound.

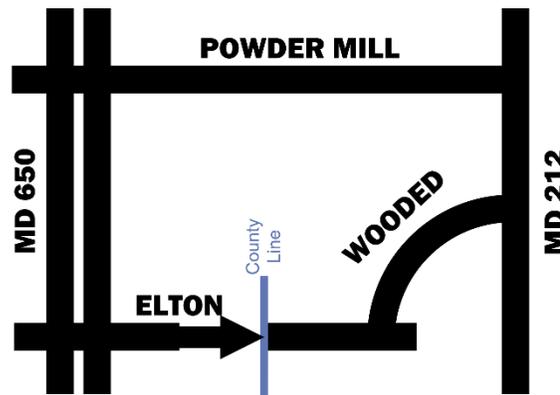


Figure 7 – Restricting Elton to One-Way Eastbound

A restriction along Elton Road (**Figure 7**) would occur approximately at the change in land use between residential and commercial / industrial, utilizing a raised island to physically block westbound flow at that point. The street could remain bidirectional on either side of the island. An example of such a treatment is shown in **Figure 8**.



Figure 8 – Example of a one-way restriction island

With approval by PG-DPWT, this same treatment could be used to restrict traffic along Wooded Way at its intersection with Riggs Road, reinforcing a prohibition on turns onto Wooded Way (Figure 9). Alternately this restriction could also be accomplished through signing only, restricting right- and/or left-turns from Riggs either all day or by time of day.

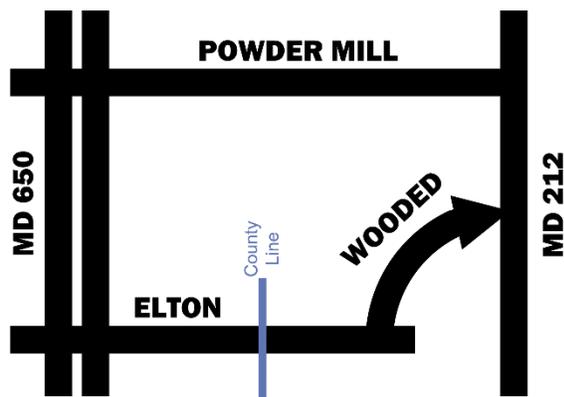


Figure 9 – Restricting Wooded Way to One-Way Eastbound

Both restrictions would be expected to significantly reduce cut-through access. However, a restriction on Elton Road would also limit the neighborhood’s own access to New Hampshire Avenue as well as the Beltway and commercial land uses that they may wish to visit. The restriction along Wooded Way would also affect neighborhood access, though perhaps not as strongly as a restriction along Elton Road.

Additional concerns were raised by the community in response to these traffic calming

options, particularly regarding their risk of shifting cut-through traffic onto other streets such as Forest Dale Drive and Forest Hill Drive, highlighted in Figure 10.

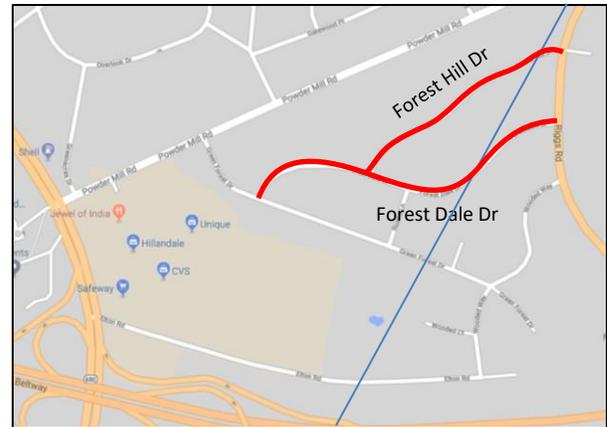


Figure 10 – Map of Hillandale

Under ideal conditions we would assert that these routes are so serpentine as to make cut-through options unpalatable as compared to using Powder Mill Road. However, we recognize stakeholders’ concerns that congestion at the Powder Mill Road / Riggs Road intersection is so significant that cut-through traffic along Forest Hill / Forest Dale could potentially remain a viable option for motorists attempting to avoid congestion.

Further consideration of traffic calming along these streets could be included as part of our regular traffic calming program, or action toward addressing congestion at the Powder Mill / Riggs intersection would provide a particularly significant deterrent to cut-through traffic.

An additional concern has been raised by the community regarding the impacts to Powder Mill Road if larger shares of cut-through traffic are successfully deterred from Elton Road. There has been no analysis at this time of such impacts.

None of these additional calming measures would be implemented without community support, and may require coordination with PG-DPWT (who have been consulted as part of this evaluation).

Concern has been raised that the addition of a slip-ramp at Elton Road would introduce several new conflict points where none exist today.

This includes a new thru movement across the intersection which, while unopposed, does cross additional vehicles through the intersection. As these are indeed new crossing points that would not have otherwise been present, they do increase exposure to any red light violations along New Hampshire Avenue, or any pedestrians crossing against a DO NOT WALK signal on the new west leg.

The slip-ramp would also introduce a new merge point where it joins the existing ramp from southbound MD 650 to the Outer Loop. As is typical of such configurations, traffic from southbound MD 650 would have a Yield condition. Again, this is a new conflict point where none exists today, though as both vehicles are traveling in approximately the same direction: collisions at such merge areas tend to be of low severity.

Contrasting this is the reduction of left-turns from westbound Powder Mill Road onto southbound New Hampshire Avenue (shopping center traffic that would instead exit via Elton Road) as well as U-turns from northbound New Hampshire to southbound New Hampshire (traffic along Elton currently trying to reach the Outer Loop).

Left- and U-turns tend to be associated with higher severity crashes. U-turns also come into particularly frequent conflict with right-turns owing to many motorists being unfamiliar with who has the right-of-way in such situations. U-turns can also conflict with pedestrians crossing against a DO NOT WALK, but doing so across a leg of traffic

that is often unoccupied by vehicles and a common (even if unlawful) activity.

Specific to the Powder Mill intersection are longstanding issues with U-turning trucks, originating from commercial and industrial uses along Elton Road. U-turning trucks must complete the maneuver either by making a three-point turn (which involves reversing on a major highway) or running up and over the curb (where users such as pedestrians and bicyclists are frequently located). Given the exposure of a three-point turn and vulnerability of pedestrians and bicyclists, collisions in these cases have an increased risk of being severe or fatal.

Shifting traffic away from the Powder Mill intersection and toward Elton also reduces traffic using the free-flow ramp from southbound New Hampshire toward the Outer Loop. Reducing traffic along this ramp reduces the exposure between motorists and pedestrians crossing this ramp.

Similarly, reducing the number of right-turns from Elton Road onto New Hampshire Avenue reduces the exposure between right-turning motorists and pedestrians crossing on the WALK signal.

Improvements in safety are anticipated from a reduction in congestion at and between the intersections. Congestion can cause road users to find themselves in atypical situations (such as blocked intersections or crosswalks) and can also lead to more sudden and aggressive user behavior.

It is our judgment that the risks of creating new conflict points is significantly outweighed by the benefits of reducing volumes associated with high-risk conflict points elsewhere.

A frequent concern regarding congestion along New Hampshire Avenue is the effect of buses through the corridor, with the assertion that buses effectively cause New Hampshire Avenue to operate as a 4-lane highway instead of a 6-lane highway.

WMATA operates the C8, K6, and K9 through the area, and Montgomery County Ride-On operates the 20 and 24. These produce a high volume of buses such that there is often a bus present between Powder Mill Road and Elton Road.

This location is also a major transfer area, with a master planned transit center on the west leg of Powder Mill Road and significant development both existing and anticipated in the immediate area. The large volumes of bus passengers using stops in this area results in longer dwell times for each bus as passengers board and alight.

Bus stops are located in each direction at both Powder Mill Road and Elton Road, with the stops being located approximately 500 feet apart. All four stops experience significant ridership.

MCDOT staff are reviewing operations in this area to evaluate bus stop consolidation. The issues along the northbound direction would remain an issue whether the proposed treatments do or do not occur, and have minimal effect on the findings of this analysis. Along the southbound direction, the proposed queue jump area at Elton removes buses from the traffic stream at one of the four stops in the immediate area.

Concern has also been raised that the queue jump lane results in a shortened bus stop, and that this may affect how many buses can queue at this stop at a time. Currently there is 200 feet of space before buses at the

southbound New Hampshire @ Elton stop would block the existing southbound ramp onto the Outer Loop. The proposed designs would shorten this to 120 feet. At a typical length of 40 feet per bus, this would reduce bus queueing capacity at the bus stop from 5 buses to 3 buses.

This stop, specifically, is served by the 20, 24, C8, and K6. The 20 and 24 both terminate and layover in the cul-de-sac on the west leg of Powder Mill Road such that this should eliminate risk of bus bunching. The C8 has a scheduled stop at FDA and the K6 has a terminating layover at the Lockwood Transit Center, in both cases being near enough as to significantly reduce the risk of bus bunching.

Bus frequency during each peak period is included in **Figure 11**. Based on these frequencies and noting the measures to reduce bus bunching: it is unlikely that more than three buses would be expected to queue at this bus stop at the same time, other than on rare or extraneous occasions. In such cases it is anticipated that the buses would quickly clear such that they are no longer blocking either the thru lanes or the existing access to the Outer Loop ramp.

Route	AM	PM
Ride-On 20	8	15
Ride-On 24	25	N/A
WMATA C8	30	30
WMATA K6	12	20

Figure 11 – Southbound Bus Headways / Frequency

Compared to the benefits to auto traffic of shifting buses out of the through lanes it is our judgment that any occasions where buses would queue beyond the bus stop are significantly outweighed by the more regular occurrence of buses not blocking any travel lanes at all.

CONCERNS

OTHER ALTERNATIVES

During public meetings other alternatives were raised by the public for consideration.

One alternative is to provide a new left-turn movement along southbound New Hampshire Avenue to access the existing northbound flyover ramp to I-495, located just north of Oakview Drive.

An additional suggestion received from public input is to provide a connection between the Powder Mill cul-de-sac and the Outer Loop.

The applicant has not performed an evaluation of either of these suggested options. Any such evaluation would have to occur at a later date as part of a separate development consideration, or as part of a County-managed analysis under LATIP.

Another alternative is to focus exclusively on treatments only at Powder Mill Road. Included in **Figure 12** are intersection delays for 2040 baseline (No Build), the Full Build, and a scenario where only the treatments on the east and west legs of Powder Mill Road be implemented (that is: not constructing the slip-ramp).

Noting the previous discussion regarding 0% versus 15% diversion associated with traffic from the Hillandale Shopping Center: all metrics here assume 0% diversion.

Scenario	Powder Mill Rd		Elton Rd	
	AM	PM	AM	PM
2040 Baseline	76.9 E	125.0 F	4.8 A	9.6 A
Full Build	55.8 E	76.1 E	4.3 A	7.3 A
Powder Mill Only	59.6 E	88.0 F	5.7 A	6.2 A

Figure 12 – Intersection Delay

Constructing only the treatments at Powder Mill Road does not result in an intersection that passes the defined congestion threshold of 80 seconds in 2040.

Additional work would be necessary, and to date there has not been further evaluation of what such needs would entail. Again, given the timing of the developer’s schedule versus their proffered treatments: any further evaluation would have to occur as part of a separate development consideration, or as part of a County-managed analysis under LATIP.

CONCERNS

OTHER CAPITAL PROJECTS

Bus Rapid Transit (BRT) and the I-270 / I-495 Traffic Relief Plan (TRP) are both major capital projects in the area. Both have not had any design performed to-date, and as these treatments being proposed at Hillandale cannot explicitly design with them in mind.

Given the scale of the BRT and TRP it is our judgment that the proposed Hillandale treatments are incidental to both. The designs of BRT and TRP would transcend the Hillandale treatments.

However, as both are still many years – if not more than a decade – away from construction and operation: it is anticipated that any treatments implemented in Hillandale would receive adequate utility as to be considered a worthwhile use of resources.